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EES-14 Geology and Geospatial Analysis (G2A) Team

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# Inventory and Capabilities of EES-14's Uncrewed Aircraft Systems

EES-14 Geology and Geospatial Analysis  
(G2A) Team

09/03/2021

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EES-14

# Uncrewed Aircraft System – Mobile Platforms

1

**Gryphon Dynamics  
Aether X8 Coaxial**



2

**Freefly  
Alta 8**



3

**Harris  
Aerial HX8**



4

**BFD Systems  
Gryphon SE8-E**



# Uncrewed Aircraft Systems - Payloads

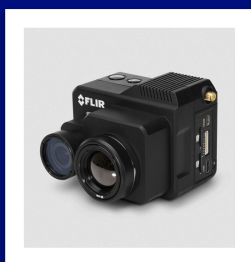
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**Routescene  
LidarPod**



6

**FLIR Duo  
Pro R**



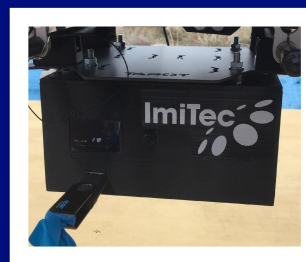
7

**Geometrics  
MagArrow**



8

**Kromek Sigma  
Autonomous  
Airborne Radiation  
Monitoring**



9

**Canon EOS  
5D Mark IV  
dSLR**



# Gryphon Dynamics X8 Coaxial



- Heavy lift capable quadcopter with 8 motors.
- 4 X 6 cell, 16-22 Ah LiPo batteries
- 20 m/s (45 mph) Max speed
- 70 kg (154 lb) - Max takeoff weight (Including self)
- Dual motors allow better control in windy conditions
- 24 minute Max flight time

# Freefly Alta 8



- Energy efficient, stable, light -medium lift Octocopter
- 9 kg (20 lb, not including self) payload lift capability
- 2 X 6 Cell, 10 Ah LiPo Battery
- 15 minute max flight time

# Harris Aerial HX8



- Heavy lift quadcopter with 8 motors.
- 4 X 6 cell, 16-22 Ah LiPo batteries
- 12.25 kg (27 lb) Max Payload
- Folds down for storage and portability, while maintaining heavy lift capability

# BFD Systems Gryphon SE8-E



- Heavy lift capable quadcopter with 8 motors.
- 4 X 6 cell, 16-22 Ah LiPo batteries
- 20 m/s (45 mph) Max speed
- 25 kg (55 lb) - Max Lift @ Sea Level
- Dual motors allow better control in windy conditions
- 24 minute Max flight time

# Routescene LidarPod



- 3 kg payload weight
- -10° C to 40° C Operating Temperature
- 0.04-0.06 accuracy at 20 m and 40 m

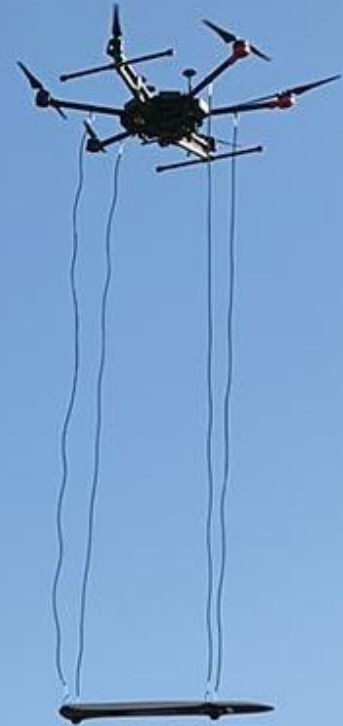
# FLIR Duo Pro R Thermal Sensor

- Lightweight RGB Camera and Thermal Imager
- 325 grams
- 7.5  $\mu\text{m}$  to 13.5  $\mu\text{m}$  – Spectral Band
- -20°C to 50°C (-4° F to 122° F) – Operating Temperature
- 56° x 45° field of view, 4000 X 3000 RGB, 336 X 256 Thermal resolution
- 11500 m (38000 feet) Max operating Altitude



# Geometrics MagArrow Magnetometer

- Magnetic Survey designed to work on a UAS Platform.
- 1-3 meter output accuracy
- 1 kg – Total weight with battery
- 3 cell 1.8 – 2.2 Ah LiPo Battery
- -10°C to +40°C (14°F to 104°F) – Operating Temperature
- 3000 m (10000ft) – Maximum operating altitude



# Kromek Sigma Autonomous Airborne Radiation Monitoring Sensor

- 25.4 x 25.4 x 25.4 mm CsI(Tl) scintillation radiation detector. Energy resolution @ 662 keV (21°C operation) <7.2% FWHM. Energy Range 50 keV – 1.5 MeV
- 7kg total weight of typical setup.
- Real time transmission of Spectrometry spectral data, simultaneous encryption, recording and storage onboard



# Canon EOS 5D Mark IV dSLR Digital Optical Camera

- Full-frame digital Single Lens Reflex camera
- 800 g (body weight)
- 36 x 24mm **30.4MP** CMOS sensor
- 4k @ 30 fps video resolution
- LP-E6N rechargeable Li-ion battery

